JUN 30 1924

PERIODICAL ROOM
GENERAL LIBRARY
UNIV. OF MICH.

SCHOOL AND SOCIETY

EDITED BY J. McKEEN CATTELL

WITH THE COOPERATION OF W. CARSON RYAN, JR., AND RAYMOND WALTERS

Volume XIX | SATURDAY, JUNE 28, 1924 | Number 496

CONTENTS

The Place of Museum Education in a Total Scheme of Educational Objectives: DAVID SNEDDEN 745
Teaching the Social Sciences: SEBA ELDRIDGE 749
Credit for Evening Work: C. S. MARSH 756
Educational Events:
The Washington Program of the National Education Association; Research Work at the Fogg Art Museum; President Neilson's Report; National Organization of Chemical Education; Sympathy and the Certification of Teachers; Negro Communities in Tide-water Virginia; A New School of Business at Michigan; Medical College Consolidation at Chicago; Extension Courses for Teachers of the University of Missouri; Conservation of Eyesight and Industrial Accidents 758
Educational Notes and News 763
Special Correspondence:
How the Dillon Public Schools Cooperate with the College: LINDEN MCCULLOUGH 767
Discussion:
The Relative Value of Laboratory Instruction: ELLIOT R. DOWNING 769
Quotations:
Standards of Vision in Education 770
Books and Literature:
How to Make a Curriculum: HENRY HARAP 771
Educational Research and Statistics:
Predicting Success or Failure in College at the Time of Entrance: J. B. JOHNSTON 772

$5.00 A YEAR | PUBLISHED WEEKLY | 15 CENTS A COPY

THE SCIENCE PRESS

LANCASTER, PA. GARRISON, N. Y.

GRAND CENTRAL TERMINAL, NEW YORK CITY

Entered as second-class matter August 15, 1923, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879.

A GREAT YEAR FOR POLITICS!

YOUR boys and girls are interested these days in the big conventions and in the excitement over the contending aspirants for political positions. Are you taking advantage of this natural interest? Have you made clear in your classes the difference between government and politics? Do you not agree that all American boys and girls ought to be experts in politics, that they should understand politics, both good and bad, and learn to distinguish between them?

Here is a book that will interest politicians of to-morrow and satisfy their curiosity about the processes of political maneuvering. Every class in civics in junior and senior high schools should be studying this book during the coming months.

THE BOYS OWN BOOK OF POLITICS

By W. G. SHEPHERD

THE MACMILLAN COMPANY

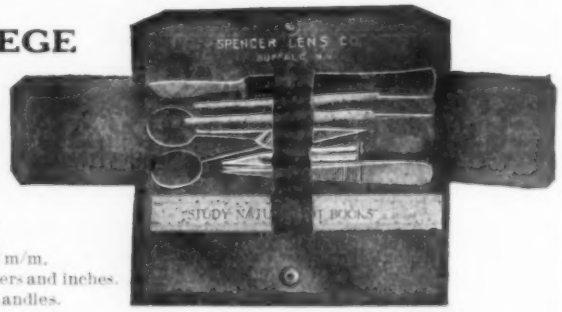
New York Boston Chicago Atlanta Dallas San Francisco

AMERICAN HEADQUARTERS

DISSECTING INSTRUMENTS

FOR

SCHOOL and COLLEGE USE



Special Offer To Schools

DISSECTING SET NUMBER 3300

Consisting of:

1—No. 2330 forceps, 115 m/m long.
1—No. 2920 scissors, 115 m/m long.
1—No. 2410 scalpel, cutting edge 32 m/m.
1—No. 3100 ruler, ruled in millimeters and inches.
2—No. 2250 needles, cedar wood handles.
1—No. 6700 pipette, with rubber bulb.

PUT UP IN ONE FOLD LEATHERETTE CASE AS SHOWN **Per Set $1.57 Net**

GUARANTEED QUALITY. **New Catalog Sent on Request**

SPENCER LENS CO.

Manufacturers

Microscopes, Microtomes, Delineascopes, Optical Measuring Instruments, Etc.

BUFFALO, N. Y.

SCHOOL AND SOCIETY

Volume XIX SATURDAY, JUNE 28, 1924 Number 496

THE PLACE OF MUSEUM EDUCATION IN A TOTAL SCHEME OF EDUCATIONAL OBJECTIVES[1]

I

MODERN educational science recognizes many kinds of educational agencies—homes and schools, churches and workshops, clubs and open-air play places, journals and photodrama, police agencies and markets, libraries and museums.

In well-organized and efficiently functioning societies each one of these would, obviously, have discovered and defined its optimum functions. Duplication of effort would be reduced to a minimum, and coordination of effort would have been carried far.

But all contemporary civilized societies are in process of strenuous evolution. Many, if not all, of their educational agencies are likewise undergoing forced changes—sometimes degenerative, sometimes regenerative, and, we hope, in their final resultants progressive.

No well-informed person can claim that our numerous educational agencies are now either well differentiated in function or well coordinated in practice. Common sense and general experience, as well as our imperfectly developed social sciences, reveal almost numberless shortcomings. That more adequate knowledge than we yet possess of social forces and values would reveal other and even more serious defects can hardly be doubted.

But the present—and by that is meant the first half of the twentieth century, in the midst of which we find ourselves—should be accounted a time of very marked progress towards more adequate understanding of the social sciences that underlie education. It is true that societies are becoming involved and precariously interdependent at an unexampled rate. But it is no less true that a kind of social enlightenment now grows at possibly no less great a rate.

For thousands of years men have trusted to nature's processes, or to theocratic controls, or to fate, or to their own impulsive reactions to sustain them in their difficulties. Only within our own time has the conviction become sufficiently general to constitute a real social force amongst many peoples, that collective action directed by scientific knowledge is, for the complex conditions of modern civilization, the only means to earthly salvation and progress.

To-day the student of social phenomena finds literally thousands of items of evidence as to the dominance on a wide scale of this new social philosophy. The pessimist may deplore that no longer do men worship with full faith at any shrine—be that revelation or nature, science or government, or even outstanding personalities. But the meliorist finds that at no previous time have men in large numbers been so eclectic as at present. These utilize, not blindly, but discriminatingly, the supports of faith and statute, science and ideal, personal leadership and majority will. From many sources must be sought the light that is to guide the world in the more complex adjustments that must increasingly be made. The springs of social action for the future must be found in many kinds of motives. The social forces now discernible are many rather than few; and many more yet remain awaiting discovery and evaluation.

[1] An address before the convention of the American Association of Museums, Washington, D. C., May 13, 1924.

II

From this social philosophy emerge certain principles of utmost importance to the hypotheses of educational need and function that we must project and test for our guidance.

(1) Education can most profitably be defined and evaluated as a highly composite and extensive social process, effected, directly or indirectly, through many agencies, and in some degree affecting all human beings throughout the entire periods of their lives.

(2) The ends of social efficiency demand not only that there shall be discovered and bounded for each agency its potential areas of optimum service, but that *liaison* agencies shall be supported whose functions shall be to insure optimum coordinations of such educational agencies.

Out of contemporary educational aspiration and experience and reinforced probably by some of the more recent findings of psychology is emerging a third principle of great significance in current reconstructions of educational aims and practices.

(3) Since every particular process of education involves a compounding of certain controls and stimuli imposed from without upon the educand, operating in conjunction with certain self-activities originating within his own nature, it is an indispensable function of every educational agency that it shall discover and apply, on behalf of each distinctive service it seeks to render, optimum combinations of external requirement or offering and of the self-activities reasonably to be expected from learners representing ascertained conditions of educability.

It is not necessary here to dwell upon the numberless instances known to most of us in which wasteful overlappings and destructive antagonisms of function operate to-day as between home and school, church and neighborhood, shop and school, newspaper and community, photodrama and library, and social workers and the family, in the generally well-meant efforts of all of them to further approved ends of education, of one type or another.

New agencies of philanthropic or state-supported nature are perpetually being brought into existence. Each one of these seems designed at first to serve some fairly concrete and manifest need. But presently its ambitions are aroused. It must extend its area of service. So much is to be done. Other agencies are incompetent or indifferent. Within the public school system itself, we have at this moment literally scores of divergent, overlapping, mutually critical "movements" all bent upon "doing good," but proceeding about it in very self-centered and most inadequately coordinated ways.

But perhaps that is the method of nature and of man in the early stages of any great dynamic evolution—of population or of knowledge, of art or of industry, of exploration or of education. Perhaps we must expect a chaos of ambitions, a jostling and hustling of aspiring workers in newly discovered fields, a medley of mutually conflicting enterprises—just as we witness vast surplusages of plant life wherever nature has scattered seeds in rich soil.

Be that as it may, none of us can doubt the great social needs for efficiency and for economy of effort as the youthful and experimental stages of any particular phase of social evolution give way to matured organization, accumulated knowledge and some degree of institutionalization of means. To the present writer it seems that especially weighty burdens of responsibility henceforth rest upon educators of all kinds to determine and apply sound standards of economy and efficiency to their policies, programs and practices.

To that end the supporters and enthusiasts within any given field may be expected, naturally, to contribute certain kinds of initial proposals; whilst perhaps certain of the enthusiasts in competing fields may be expected to contribute others. But, in the last analysis, neither plaintiffs nor defendants can give final shape or valuation to plans looking to optimum co-

ordinations of the efforts of potentially rivaling or overlapping agencies of education. Only by dispassionate agencies of comprehensive vision can final judgments of most serviceableness be rendered.

Some day we shall have a great educational council in America to which will come representatives best qualified to make realistic and authenticated contributions of fact, ideal and valuation as to the educational realizations and potentialities of the several distinctive agencies now playing their parts in the education of the American people—including not only such more consciously purposive agencies as homes, schools, churches, play places, libraries, museums and police controls, but also such indirect and perhaps commercial agencies as journals, photodrama, travel, clubs and markets.

III

It has long been felt by a few persons in every considerable civilized community that museums in their several types are valuable means of education—or, at any rate, that they should be so. In these same communities multitudes of well-informed citizens and travellers have mildly approved the existence of museums—as they have approved the existence of theatres, monuments, conserved ruins and recreational resorts—in the vague belief that, in ways not very clearly understood, these contributed inspiration and enlightenment to the community at large.

Probably a large amount of a certain kind of *laissez faire* or opportunistic spirit has controlled in the provision and administration of such museum education. Try to find out what the public wants—or rather, what a portion of the public potentially capable of being appealed to, wants. Give them what they will approve of, but leave them to judge of its actual educational worth.

Leading authorities on the possibilities of museum education have, on the other hand, developed very extensive and very ambitious plans. Does any other educational agency cover so many degrees of pedagogic latitude as some of our museums —those which at one extreme sustain explorations in far quarters of the globe, and at the other assemble instructional materials and picture slides for primary school children—which on the one hand cater to the curiosities of holiday crowds, and on the other, provide the means of technological research?

Towards fuller and more analytical interpretation of the potentialities of museum education we must remember that we are becoming a land of cities—and especially since the automobile is rendering the city readily accessible to most country folk. Our cities are becoming always more wealthy. The culture of at least some of their people is growing broader, deeper and finer. The demand for more and better culture grows steadily.

In these cities we may expect better theatres, better schools, better facilities for physical recreation and better libraries. Shall we see better and more numerous museums? Yes, if museums find and advance their best fields of service—that is, if they evolve with the times, serve the more worthy needs of the people and become progressively more dynamic and self-critical.

Former times were far more hospitable than is the present to the customary, the traditional. An old church, an old political institution, an old tool claimed something of respect and conservation just because of its age. It is doubtful whether future men will reverence for its age the antiquated even as much as do we of to-day.

We shall conserve and study the ancient things of nature and of art far more than we do now—but in a spirit entirely different from that so much in evidence during, for example, the middle ages. We shall

neither bend the knee to the past nor jeer at and flout it. We shall seek to understand it, to appreciate it, to use once again its possible contributions to our need.

There are some museums in the world to-day—they are perhaps not so much in evidence in America—that are as static, out-of-date and unserviceable as some of the old cliff-perched castles on the Rhine. These museums have themselves become antiquities like some of the relics which they conserve. The blood of timeliness and vital contact has ebbed from their veins.

The living and serviceable museum—whether of science, history, plastic art or industry—can hardly content itself with one or even a very few educational functions. It must, indeed, store many things of no popular interest—for the few serious scholars and researchers. But it can not well afford to neglect the superficial curiosities and appreciational interests of a multitude—that multitude which, after all, is in a democracy the soil from which come personalities capable of extended self-culture.

A live museum may be chiefly an agency of adult education—but if it give no consideration to children, and especially if it have no partnership with schools, it will be missing some of its most precious opportunities.

To an outsider like the writer it would appear that the possible educational functions of any museum cover a range corresponding in breadth at least to those of a university, a newspaper or the photodrama. There is much evidence that we are on the eve of an extensive movement for more and better adult education. Adult education must continue to be, as it always has been, largely self-education. But good self-education can never dispense with cooperative (even if commercial) organization of its ways and means, nor with expert direction and supervision. Self-education of adults has always existed, of course. It goes on in every gathering and under all conditions of contact with nature. For our generation much of it comes through newspaper and magazine, moving picture and advertising, travel and trade.

But there are many signs of movements under way that look to the systematization of adult self-education. Much of that is now like the power of mountain streams—actively produced, but serving few useful purposes, and especially lacking in cumulative effect. Never before have adults had so much leisure as is now enjoyed by Americans. Few other peoples have had the advantage of more abundant cultural means than are now available in this country—books, radio, photodrama, means of research, facilities for crafts, hobbies and the like.

IV

To the museum that thus recognizes varied responsibilities what is the single, most important note of admonition to be uttered? It is this: be sure first to give clear definition to each educational function; and then be sure to adjust ways and means to the realization of this function. Many museums, like some other educational agencies not subject to commercial or other sharply competitive pressures—such as academies, colleges, libraries, reform schools, guild foundations and even some long-established publishing houses—tend strongly not only to become conservative and static, but to expect one type of offering or one mode of presentation to satisfy varied needs.

The thousands of educational aspirations of our times are often but half-articulate. But they do gather together into certain massive social demands. These can only be satisfied by higher types of efficiency than the customary practices of the past give us. In medicine, in manufacture, in agriculture, in trade and in research, the

needs of to-day can be met only by increased specialization, by sharper differentiation of unlike objectives and by the more scientific adjustment of the means calculated to the realization of those objectives. In contrast with these lines of social effort, most of our educational agencies only reluctantly differentiate their fields of subject-matter according to the ends they should serve. They are even more loth to recognize effectively differential potentialities in those children and adults whom they seek to educate.

The recommendation next in importance is this: join forces actively—take the initiative, if necessary—with representatives of all other educational agencies that seek better coordinations of aims and of processes. Some day—perhaps soon, in view of many growing demands and some current tendencies—we shall have, as suggested above, a great council composed of picked representatives of the scores of kinds of education now available—from that of the home and neighborhood play-place to that of the correspondence school and radio. This council will study not only problems of coordination in general—but it will especially study them in relation to the different levels of potentiality revealed by modern psychology.

Such a council will, naturally, address itself to proposing a kind of "first aid" for individuals vaguely and inarticulately conscious of educational needs. Beyond the age of fifteen most persons are greatly in want of educational guidance. They require maps, "educational blue-books," self-help manuals and other helps of a similar nature yet to be invented.

The education of the future must develop, far more than we have yet contemplated, the resources of "self-education." Beyond the years of childhood most of the education of the past has, of course, been self-education—but self-education only remotely and vaguely approved, much less directed and aided consciously by societies. Museums can be made peculiarly valuable as agencies of advanced (or "continuation") education for many persons—at least towards the ends of culture and civism. But if this result is to be achieved economically much more must be done for educational guidance than has yet been planned.

DAVID SNEDDEN

TEACHERS COLLEGE,
COLUMBIA UNIVERSITY

TEACHING THE SOCIAL SCIENCES

IT is a commonplace of educational psychology that instruction in any subject must be linked up, if it is to be effective, with the student's own experience. A closely related principle is that methods of instruction should be adapted to attitudes and interests of the given group of students, in order to stimulate and develop the student's interest in the subjects of instruction. To this end the attempt is made to arouse real problems in the student's mind and, with his aid, devise interesting activities having as their aims both the intensification of interest in, and the mastery of, these problems, so far as that may be possible.

Some tentative experiments with methods of teaching sociology courses had led me to believe that most courses in the social sciences could be quite readily organized in conformity with these principles. I had become very skeptical as to the value of the methods usually employed in sociology and other college courses and, in particular, of formal quizzes during and at the end of the semester as a means of stimulating effort by the student and of testing his proficiency. It seemed to me that by employing different methods sociology could be made a living, even an exciting, subject for the student, and to an unusual degree, so far as it could be linked up with his social ex-

periences, as much of it undoubtedly could be.

With a view to testing this possibility, a series of experiments were undertaken in connection with my sociology courses at the University of Kansas during the last academic year. The plan of these experiments was to center my courses in elements of sociology (in which three classes were taught during the year) and in rural and urban sociology (in which there was one class each) in the local community of the individual student. Special weight was given to investigations by the student of social problems, both "theoretical" and "practical," in his own community, and the preparation of reports thereon.

The problems assigned for report were vitalized in the student's mind, so far as possible, by readings, lectures and discussions, all of which were brought down to terms of the student's own experience. Formal quizzes were entirely eliminated, though what our students picturesquely term "shot-gun quizzes" (a question or two on the day's reading assignment) were retained as a stimulus to the preparation of such assignment and thereby for the class discussion. It was made clear to the students that study of and report on their local community would take the place of formal quizzes in these courses, and that the final examinations (required under the university rules) would entail no special preparation or be given any particular weight in the determination of semester grades.

Some additional details may be given. A definite number of reports, each on a clearly defined group of problems, were required. Specific but not detailed outlines were supplied the students as an aid in planning their investigations and reports. These outlines were simply series of problems which had grown out of the class discussion. Reading outside the text-book was largely, though not entirely, concentrated on material bearing on conditions in the individual student's home community. Class-room work was a combination of discussion and lecture, the latter restricted to the recapitulation and amplification of problems and constructive suggestions brought out in the class discussion. Class discussion, however, was not restricted to the problems of the local community, as it was recognized that the students in these courses should be introduced to the state, national and even international aspects of the problems considered. Group planning and conduct of the investigations was not in the courses here under consideration a feature of the experiment.

As might be expected, considerable difficulty was experienced in getting adequate local material on many problems assigned for report, especially by students living in other states. In many cases, to meet this difficulty, the students were permitted to study and report on Lawrence or some nearby rural community (in the case of rural sociology) instead of their own home communities. Students in rural and urban sociology classes were required to adopt a rural or urban community (as the case might be) for purposes of the course, even though they had not lived in a community of the type to be studied. The attempt was made, however, to discourage investigations of Lawrence for purposes of these courses, by students from other communities, owing to the inconvenience involved for local people in turning loose a large number of amateur investigators on the local community.

Some special materials on local communities in this state were collected and assembled in the library, and other sources of such material were recommended, but the student was made responsible for collecting other material needed, on his own initiative. It turned out that the paucity of material on many of the assigned problems, for a great many communities, was itself very instructive to students coming from such communities.

Reports were promptly read, construc-

tively criticized and handed back to the students for guidance in the collection and organization of material for later reports. One or two reports on each group of problems assigned in the given course were read and discussed in class, with a view to emphasizing sound, and pointing out faulty, methods in investigations of this type.

It will be seen that these courses were organized according to the so-called project method, though in a modified form, and conducted in large part by laboratory methods, with the home community constituting the individual student's laboratory for the given course.

The final examinations in these courses were turned into a stock-taking of the courses themselves, and especially of the methods employed therein, with the students playing the rôle of critics and appraisers. In some or all the classes here reported on students were asked to specify the topics covered by the given course which severally seemed the more important, less important, and specially difficult, with reasons for their opinions on these points; to indicate practical uses of the course, especially in their prospective future activities; to specify practicable methods of continuing their study of the given subject, other than subsequent courses in allied subjects; to appraise the different texts used with respect to their interest and value for the course; to compare the methods employed in the course with methods more commonly employed (formal quizzes, etc.) in regard to (1) interest aroused, (2) mastery of the subject and (3) training in methods of investigation; and, finally, to suggest modifications in the methods employed, including the type of reports required, calculated to make the course more effective as regards stimulation of interest, mastery of subject and training in methods of investigation.

Two classes, in which some dishonest work had been detected, were asked to indicate, so far as they were able to judge, the nature and extent of such work in the given class as a whole, and to suggest means of counteracting such tendencies in the future.

The results of these experiments are appraised, so far as students' expressions of opinion are a reliable criterion, by their answers to these questions, and particularly by their comparisons of the methods employed with methods more commonly employed in university courses, together with their suggestions for improvements in method designed to make the given course more effective in the respects above specified. We may confine our further discussion to these comparisons and suggestions, together with the student's observations on dishonesty in class work, which latter, as we shall see, suggest some interesting questions.

It should be stated that the instructor was careful to explain the intent of these particular questions as being, *not* to evoke commendation of the given course, but criticisms and suggestions which might be helpful in planning future courses in the same subject. It was stated that constructive criticisms of the course in respect to the features indicated would be more welcome to the instructor than an uncritical treatment of those questions. It was suggested that students who did not feel that they could discuss those questions freely might omit all consideration of them, and without prejudice to their class standing.

While no quantitative comparisons could be made between the results of these methods and of the methods more commonly employed in college and university courses, the consensus of the students' expressed opinions on the features indicated agreed closely with the instructor's own judgment thereon. Moreover, many criticisms of the methods employed, with suggestions for their improvement, impressed the instructor as being most valuable, and these are

being utilized in the planning of subsequent courses in the same subjects. It should be added as a most interesting outcome of the experiment that students presented a good many questions, criticisms and suggestions respecting the methods employed in these courses which had not occurred to the instructor.

One hundred and ninety-three students in the five classes specified (three in elements of sociology, one in rural sociology and one in urban sociology) expressed themselves regarding these matters, including one student who did not discuss the particular questions here under consideration, and who has been classed as non-committal thereon. Of this number 158 gave a distinctly favorable verdict on the methods employed, although proffering many suggestions and critisms in regard thereto; three gave unfavorable verdicts; and 32 were non-committal or gave qualified approval. Nearly all the latter group, judging from their discussion, preferred the methods in question to those more commonly employed, but they could not be classified as distinctly favorable or unfavorable toward the methods as a whole.

It may be of interest to discuss in some detail the students' evaluations of the methods employed in these courses. Not only is their general verdict in favor of the methods employed and against the contrasted methods significant, but the grounds assigned for their opinions are of equal significance.

There was almost universal condemnation of the formal quiz as being ineffective in its results, and unreliable as a test of the student's knowledge. The project and laboratory methods employed in these courses, on the other hand, were judged to be effective because they aroused interest in problems coming within the range of the student's own experience, and entailed a direct investigation of these problems, with a greater mastery of the subject and better training in investigation as the result. Many students stressed the point that more work was involved by the methods employed, but that these methods were preferred, notwithstanding, on account of the more interesting character and more substantial results of the work.

No short summary can do justice to the students' discussion of these questions. A better idea of it will be conveyed by quoting extracts from the students' own papers. "One may fall down because of 'quiz day excitement,'" says one student, "or temporary physical reasons. One should not be measured 'mentally' by the work of a quiz hour." "The writing of the assigned reports," says another, "has necessitated not only a knowledge of the texts and lectures but a practical application of them and individual thinking. The common method employed generally succeeds in obtaining the first but rarely the last two. The method employed in this course is much harder for that reason but is more practical and of much more value." "Mastery of the subject," writes another student, "is undoubtedly greater in this natural form of approach. Instead of stifling interest, it arouses it, and a sustained interest leads to mastery. Some of the class got so interested in evolution and crime that they even did a lot of outside reading that wasn't required!" "Sociology as presented here," says one student, "has been made a living subject and has been made the framework upon which to study and think of the other social sciences." "It was the perfect project method for adults," writes a teacher in the summer session class in elements of sociology. "I would say," another student puts it, "that writing and working up these reports compares to the laboratory courses in botany, etc. We are working with actual facts and problems." A student in urban sociology expressed himself to a like effect: "They say that laboratory work in any

course is vastly more important than book study. That is so in this course, since all our work was laboratory work because we investigated actual conditions as they exist in our own city."

Some students recognized in the preparation of the reports a valuable training in English composition. "The report writing," says one of these, "has been a help to me from the rhetorical standpoint. My rhetoric and expression is not what it should be and I am sure there is no method that will improve it more than that of constant practice in writing with an attempt to improve it."

Answers to these and other questions assigned for the final examination indicated an appreciation of the training for community leadership supplied by the given course, and a determination to take an active part in dealing with problems of the local community uncovered by investigations for the course.

One final quotation from a student in rural sociology, bringing together many of these specific points of appraisal and adding others, may be given. She says: "I have learned more about people, sociology and sociological principles in this three-hour course than in any I ever took. I understand my own community and the community in which I expect to live better and know more about it than I ever expected to know. It has taught me to notice these problems, to study them and most of all how to study them. And this course has enabled me to study and understand the United States and state reports and statistics which I never took the time to do before. I actually found something interesting and fascinating about them.

"As far as my interest was concerned I can say honestly that I haven't been 'bored to tears.' There seemed to be something vital and worth while about each topic and something in it that I could illustrate from my own home community. I believe methods such as were used put something of a practical atmosphere about the whole subject—something we could get a hold on and apply and use."

These quotations will suffice to convey something of the students' attitudes toward the methods employed in these several courses. Approval was not unanimous or uncritical, as we shall show, but the results of the experiment, considered from the students' standpoint, were on the whole distinctly favorable. As before stated, the consensus of the students' opinions on the methods employed and the results secured thereby agree closely with the instructor's judgment on the same questions. Living with this experiment day after day for the period indicated, and comparing the students' intellectual development under the methods employed with that of students under older methods employed by the same instructor in earlier courses, produced a strong conviction that the project and laboratory methods as employed in the courses here considered are much superior from every point of view to the methods more commonly employed. It is, of course, desirable that methods be devised, so far as possible, whereby quantitative comparisons of these and other methods may be undertaken. In the meantime, individual teachers may institute similar experiments in their classes with the expectation of arriving at results which to them at least will be quite objective, and most valuable in the development of their teaching methods. The communication of the results of such experiments to others in their own field, and, for that matter, in other fields, would furnish a check on experiments by the individual teacher, and eventually produce a body of evidence quite objective, though not exact, in character.

The favorable results of the experiments here under consideration, though gratifying, offered no occasion for complacency on the part of the instructor. Not only did a

great majority of students offer criticisms and suggestions for the improvement of the methods employed, but a small number of students stood up for the older methods here brought into comparison with the methods of the experiment. Two students of the 193 writing on these questions expressed a belief in the value of formal quizzes, one of these preferring the quiz to the report method altogether, the other believing the quiz to be a valuable supplement to the report method. A student in a class not here reported on writes: "I think that very often a final examination means a lot to the student. It requires a thorough review of the subject which gives him a view of the subject as a whole and in a condensed form, such as he could get no other way." The consensus of student opinion, however, was decidedly opposed to this view. There were also a few students who preferred the straight lecture method in the class-room to the combination of lecture and class discussion which characterized these courses.

The defense of the older methods by this small number of students is here reported in some detail, not only as one type of reaction to the methods of the experiment, but also as a sort of challenge to the positive results of the experiment as a whole. They suggest that problems are raised by a consideration of such methods which can not be definitely settled by any single series of experiments. But such problems must of course be settled, if at all, by experiments of this general character, specially designed to test the given problems and repeated under different conditions so as to arrive at definitive conclusions. It might be suggested that differences in student opinion on alternative methods of instruction—whatever value we may assign to such opinion—may be largely due to differences in intellectual attitudes, so that conclusions from such experiments as are here reported on would be, not absolute, but statistical in character. Such results may mean that methods of instruction should be quite flexible, so as to be adaptable to students with different tastes and interests.

A source of valuable guidance in the development of teaching methods was found in the criticisms and suggestions offered by students who were distinctly favorable to, non-committal on, or somewhat reserved in their approval of, the type of methods employed. One hundred and forty of the 193 students in these classes offered criticisms of the methods employed or suggestions for improvement thereof. The most interesting features of these criticisms and suggestions were (1) their range and pertinency, (2) agreement in a number of criticisms and suggestions by many different students, and (3) the presentation, by different students, of directly opposite suggestions and criticisms. Taken as a whole, these suggestions and criticisms covered every feature of the methods employed, and vitalized for the instructor as nothing else could the problems pertaining to the development of these methods. They ranged all the way from criticisms and suggestions respecting particular assignments to proposed modifications of the given course as a whole.

A few of the more significant suggestions and criticisms stressed by students will serve to indicate the type of scrutiny to which the methods employed were subjected. More specific problems assigned for report; greater latitude in specializing on particular problems; more comparative study of local communities; detailed instruction in methods of investigation; group rather than individual work in investigation; more first-hand investigation, either in Lawrence or in the student's home community during holidays; trips of inspection in or around Lawrence; better correlation of class work with the daily newspaper—these were some of the constructive suggestions presented by the students, several of them over and over again by differ-

ent students. Other suggestions had reference to the procedure of directing, checking up or facilitating the student's work. These included recommendations for more "shot-gun quizzes" as a better stimulus to preparation of the daily assignment; submission of detailed data collected by the student with his reports; inspection of the students' note-books without prior warning; placing all assignments for report in the students' hands at the beginning of the semester, so as to allow more time for the collection of material; assembling more material in the library on local communities, especially in neighboring states, and so on.

The discussion of dishonest work was extremely suggestive. Not only were dishonest methods employed in the classes discussing this question pointed out, and measures for dealing with them suggested, but the problem of cheating in the university generally was considered. It would take us too far afield to consider in any detail the opinions of the students on this problem. Suffice it to say that many of them discussed it with an acumen and a wealth of constructive suggestion that was most gratifying. Although estimates of the extent of dishonesty in these particular classes varied widely, the consensus of the students' opinion was that there is less incentive to and opportunity for dishonest work where projects of the type described are undertaken, than where tests of the student's proficiency are by the usual quiz method, with its emphasis on memory work. But tendencies toward dishonest work were pointed out, and remedies for them recommended, some of them, in my judgment, very effective remedies.

An opinion I should like to express as to the general subject—one suggested but not explicity brought out in the discussions of these students—is that cheating or its absence is largely a function of the aims and methods stressed by the particular course. More explicitly, dishonest work will usually bear an inverse ratio to the interest aroused in the subject-matter of the given course, provided the demands of the course are not too exacting (when a different sort of interest would supervene), and all necessary assistance is given the student in his work on the subject. When interest is aroused dishonest work becomes irrelevant to the student's purposes. The problem of eliminating dishonesty in college and university work would then seem to be largely the problem of arousing and developing the student's interest in the subject of instruction, and of aiding him to gratify that interest. The experiments here reported have a significance for both these problems.

The more significant results of these experiments may be briefly recapitulated. They have demonstrated—so far as a demonstration was possible—that the project and laboratory methods are quite feasible in sociology courses of the type under consideration, and that they are superior to the familiar lecture-reading-quiz methods of instruction in such courses; that experiments of this character are of the greatest value to the individual teacher and, so far as their results can be objectively presented, to other teachers as well, especially in the same field; that *students* are in a position to make important contributions to the development of teaching methods, and that they should be encouraged to cooperate in this development.

It would be interesting to consider the applicability in other fields of methods of the type employed in these particular experiments. I am of the opinion that such methods are applicable in all courses dealing in any direct way with community problems. Probably the majority of college and university courses in sociology, economics, political science and education could in large part be conducted according to such methods. They should also be applicable in many history, law, psychology and philosophy courses, dealing, as these

subjects largely do, with community life. City planning, sanitation and many other special subjects of interest to local communities could be vitalized by similar methods. Other applications will suggest themselves to those interested in these possibilities.

SEBA ELDRIDGE

UNIVERSITY OF KANSAS

CREDIT FOR EVENING WORK[1]

WHAT is the basis of credit for day courses? Obviously, different courses make varying demands upon students. One day course that meets two or three times a week bears the same credit as another, although the second may demand twice as much time and preparation as the first. Without attempting to go into the subject of the ideal basis of credit for any given course, this paper considers merely the relative accomplishments of day students and evening students in the same course given to both groups. The assumption is that if the day course merits credit, the evening course does also, when in the judgment of the instructor, the evening students do work comparable to the day students. The paper is based on the expressions of opinions of more than a hundred members of the university faculties who are teaching the same course or courses to both day and evening students in 15 different urban universities. Their opinions were secured by means of a questionnaire. A wide range of interests is represented—arts and sciences, business administration, journalism, engineering, etc.

The questionnaire first asked for comment on comparative scholastic accomplishments of day and evening students in the same courses as to recitations and discussions in the class-room. Ninety-seven instructors expressed their opinions on this subject. Of these 97, 48 say that the class-room work of their evening students is better than that of their day students; 17 say that the two groups are on a par; 13 more say that the discussions in the evening classes are better, but that the recitations on prepared work are poorer; and 19 say that class-room results in the day classes are better. Roughly 50 per cent. of the replies indicate that the class work in the evening session is better; an additional 17 per cent. say it is on a par with that in the day session and 13 per cent. more say that discussions only in the evening sessions are better. My own interpretation of all the replies, some of which were not sharp and clear, is that, by a ratio of about 3 to 1, they indicate the judgment that class-room work in the evening session is as good as, or better than that in the day session, in the same subjects.

Some of the favorable comments are:

Evening courses decidedly the better; more mature, more earnest, therefore more thorough. Recitations lively. Get some rebound from a class of experienced adults. . . .

A few evening students equal or excel the best students in the day courses and the rest show more independence and originality in thinking. . . .

Evening students more interested; ask more questions.

Evening group has larger number of creative and independent minds. . . .

Able students in evening courses outshine able students in day, but fewer of them. . . .

Discussions more animated and participated in more generally in the evening. . . .

Evening student comes with freer mind for thinking and with more mature purpose; has more initiative; more adaptability. . . .

Less effort to make evening students see importance of work. . . .

Evening students ask more questions concerning relation of class work and current topics. . . .

Evening students' discussions more fruitful.

Applications often novel and suggestive.

Enjoy vitality of night discussions; bring more interest and expression. . . .

The next question was regarding the relative merits of written work, themes, problems, examinations, etc., in the two groups of students in the same subjects. To this question there were 86 replies. Twenty-three said that written work in the evening classes is better; 24 said that the work of the two groups is on a par, and 39 expressed their preference for the written work of the day student. To summarize: 54 per cent. say that written work of the evening student is as good as, or better

[1] A paper read before the Association of Urban Universities at its annual meeting at the University of Buffalo, November 16, 1923.

than that of the day students, while adverse comments are frequently directed to form and quantity rather than quality of written work. These are some of the comments:

Man making the briefest statement has the most effective grasp. Day students tend to mimic textbooks. . . .

Evening men as a rule put more time on problems.

Practically the same written work required and little difference in quality. . . .

Written work often better in the evening session because of maturity of students. . . .

Written work frequently less correct technically, but possesses a freedom of interpretation that is not apparent in the day courses. . . .

Much less written work obtainable; solutions of problems on a par with day session. . . .

Written work about as good at night as in day; problems usually not quite as good. . . .

Day students excel in themes; night students excel in problems. . . .

The evening work compares very favorably with the day work in all respects. . . .

Same as day. . . .

Examination ratings are higher than in the day session. . . .

Written work generally more mature; more original. . . .

Constant and careful writing during work hours increases both facility and interest. Best work is secured from students holding secretarial or similar positions in the day time. . . .

It is a bit more difficult to get as great a variety of written work; his papers are as well done as the day student's. . . .

Evening students do fully as well as day students in final examinations. . . .

In many cases, the written work is more carefully performed than by day students. . . .

As a whole, written work better than that turned in by day students. . . .

The third question was on the ability of the evening students to accomplish in a two-hour session the equivalent of what is done in a three-hour course for day students. Knowing that in many evening sessions it is the general practice to have a given course meet one night a week for two hours, I sought opinions as to whether or not such a class would do in a semester the equivalent of what is ordinarily done in a day course meeting three times a week. To this question there were 96 replies: 17 said that the work accomplished in their two-hour evening classes was equal to that in three-hour day classes, or very nearly so. In one or two instances the ratio was 4 to 5, or 2½ to 3½. Thirty-five indicated that they do identical amounts of work in the two groups, hour for hour. Thirty-two made comments to the effect that the evening student, in their opinion, does not accomplish as much in two hours as the day student in three; but they gave no indication that the work of the evening student was not equal, hour for hour, to that of the day student. Only 11 took occasion to say that the evening student does not accomplish, hour for hour, results equal to those of the day students. To summarize again: 55 per cent. of my replies on written work express the opinion that the evening student does as much work, hour for hour, as the day student, or even more; 11 per cent. say that he does less, and 34 per cent. express opinions which are not positive in either direction.

Some who replied ventured the opinion that results in evening classes would prove better in those subjects which were close to the daily interests, perhaps vocational interests, of the students. That, however, did not prove to be the case. Evening courses in education and psychology, made up of teachers, received adverse comments from their instructors in quite as high proportion as courses having no vocational application. The same is true of business courses made up of business men. Vocational interests seem to have little relation to classroom accomplishments. I am tempted, rather, to infer from the opinions expressed in the replies that the interest and accomplishments of evening students depend much upon the enthusiasm of the instructor, plus the effectiveness of his material and his manner of using it.

A comment made by no less than 20 instructors was on the unevenness of preparation, and the variety of background and ability of evening students. The remedy for unevenness of preparation would seem to be a more careful sorting of students into classes according to preparation. Might not the same expedient lessen the complaints against unevenness of ability? For instance, here in the University of Buffalo, we have a one semester course in short story writing in which the students seem to fall naturally into two groups, representing extremes of ability. The instructor has made

the very happy suggestion that for next year this course, instead of meeting once a week, throughout one semester, shall be divided into two groups according to ability, to meet on alternate weeks throughout the year. In this particular course, that arrangement will give the added advantage of a longer time interval between meetings of the class. Another suggestion coming from one of the replies is that unusually high grade work be rewarded by the allowance of extra credit, or that the more able students be given extra assignments and consequently more credit in a given course.

The decisive majority of favorable comments on the accomplishments of evening students in class-room discussions ought, in my opinion, to indicate the wisdom of capitalizing that situation by the use of questions and discussions to a larger extent, and of formal lectures, perhaps less. Will not the exercise of more ingenuity by instructors develop ways of bringing out theories by the inductive method so that not so much reliance must be placed on formal lectures or perhaps on text-books? The syllabus of questions for discussion might be one means of making more effective use of the willingness to discuss. Is it not a fact that relatively few text-books have yet been written primarily for the use of the more mature adult evening student? In many instances, it would seem that text-books might omit large portions of purely descriptive material necessary to the day student but already part and parcel of the knowledge of the evening student.

Evening students are ambitious and earnest. They are crowding into our urban universities in such numbers as to merit a technique and a presentation of text material that takes into account not only their maturity and experience, but also their limitations in time available for library work. Material in its present form prepared largely for day students in text-books or in lectures is not necessarily adequate for evening students. May I offer as my conclusion after reading the expressed judgments of these men who are teaching the same courses to both day and evening students that the evening work on the whole compares so favorably with day work as to be worth, in most instances, credit toward a degree; and further, that the day is past when this association needs to spend much time in discussing whether or not the evening student is capable of doing a quantity and quality of work that entitles him to the Bachelor's Degree.

C. S. MARSH
DEAN OF THE EVENING SESSION,
UNIVERSITY OF BUFFALO

EDUCATIONAL EVENTS

THE WASHINGTON PROGRAM OF THE NATIONAL EDUCATION ASSOCIATION

PRESIDENT CALVIN COOLIDGE will address the National Education Association on the morning of Friday, July 4, according to the program of the association made public by President Olive M. Jones. President Coolidge's speech, with appropriate music, will constitute the last general session of the association and will be followed on Friday afternoon by a series of patriotic pilgrimages which will be the closing feature of the convention.

The program opens on Sunday, June 29, with a vesper service on the steps of the Capitol and an address by Commissioner Payson Smith, of Massachusetts. The Sunday evening session will be devoted to the topic "Moral and religious education." Monday morning "Three great professional problems" will be discussed—retirement allowances, tenure and the education bill. The formal opening session will be on Monday evening, with addresses by U. S. Commissioner of Education Tigert, Superintendent Frank Ballou of Washington, and Miss Olive M. Jones.

Tuesday morning will see the first business session of the Representative Assembly, the topics for consideration including: Classroom teachers' problems (Mrs. Mary C. C. Bradford); Rural teachers' problems (Harold W. Foght); The world federation of education associations (Augustus O. Thomas); Health problems in education (Thomas D. Wood); Character problems (Effie MacGregor); A code of ethics for teachers (May Wade); and Illiteracy (Mrs. Cora Wilson Stewart). The Tuesday evening meeting will consider the "Contribution to education of the teacher, principal, superintendent and parent."

At the Wednesday morning business session reports will be presented on the editorial coun-

cil, visual education, arithmetic revision, problems of English teaching, social studies, classification of educational material, educational nomenclature, thrift problems and the American Citizenship League. Wednesday afternoon will be open house, with some twenty-two organizations anxious to entertain the delegates and visitors to the meeting.

The final business session will be on Thursday morning, when reports of officers will be acted upon and the committees on nominations and resolutions will present their reports. Thursday evening will be given over to a program dealing with "The relation of the teacher to democratic ideals of government."

Among the organizations meeting with the National Education Association at Washington whose programs have already been announced are the following: The National Council of Education, the National Council for the Social Studies, the American Junior Red Cross, the Department of Business Education, the Department of Visual Education, the Southern Woman's Educational Alliance, the National Association of Visiting Teachers, the Department of Physical and Health Education, the Department of Rural Education, the Department of Secondary Education, the Department of School Administration, the School Garden Association of America, the Department of Science Instruction, the National Geographic Society, the National Vocational Guidance Association, the Department of Deans of Women, the Department of Child Hygiene, the Department of Educational Publications, the Department of Classroom Teachers, the Visual Instruction Society of America, the Department of Elementary School Principals, the Department of Kindergarten Education, the Department of Music Education, the Department of Normal Schools and Teachers Colleges, the Department of Immigrant Education, the Conference on Behavior Problem Children, and the Conference on Lip Reading.

RESEARCH WORK AT THE FOGG ART MUSEUM

THE chemistry of pigments in relation to the preservation of works of art is one of the phases of research activity now being carried on by the Fine Arts Division of Harvard University at the Fogg Art Museum, as described in a recent publication of the division. Many of the paintings created to-day by our leading artists may not last more than fifty or a hundred years because of the use of inferior canvasses and pigments; and many older pictures are in danger of destruction through improper care. Members of the division have spent considerable time in Europe studying with experts in this field; a trained chemist assists in the work in the Fogg Museum. "Work of this nature is a definite obligation on the part of America in its relation to the rapidly growing proportion of the art treasures of the world which are coming to this country."

Another branch of research activity of the Fine Arts Division is original exploration and excavation in the field of archeology.

There is now an expedition in western China, along the ancient Indo-China trade route, engaged in archeological exploration financed in advance for five years. A considerable program of excavation in Greek lands has been financed for the same period, but has been temporarily suspended because of political conditions in that country. The Harvard Division of Fine Arts expresses the opinion that "the stimulating effect of these current explorations and excavations on instruction in the fine arts is almost as valuable as the acquisitions which will probably result from them."

PRESIDENT NEILSON'S REPORT

IN his annual report as president of Smith College, issued recently, President William A. Neilson writes:

> There is one great hindrance to the progress of education in America and in my view only one, and that is the scarcity of educators of the right sort. If we could obtain supplies of scholarly, intellectual teachers with some knowledge of human nature, we should be able to dispense with much machinery, because those people, by their individual contacts with the students, would do nearly all the things that we now have to contrive devices for having done as well as we can.
>
> College faculties are regarded in quite contrary ways by different people. If you read the records of the American Association of University Professors you think that college teachers of this country are a pack of hounds straining at the leash, with college presidents and trustees holding them back from all kinds of splendid experiments in education. If you read the views of persons like Ralph

Easley, for example, you would suppose that college professors were a band of red radicals eager to seduce the young of the country from allegiance to the constitution. And if you talk with college administrators you will find that the average college faculty is a mass of inertia which can be got to move only by long, slow, steady pressure, so "sot" are they in their ways.

An experiment in the teaching of languages to be tried at Smith next year is described by President Neilson as follows:

When a question concerning the curriculum comes up for discussion, it is usually taken for granted that you can not find an answer in any scientific way, educational experimentation is difficult because of the lack of similarity in any two people. That is the fundamental difficulty of our job and the fundamental charm of it, that we are dealing with different people and that the results are not identical because the people are different.

Take a plan we are beginning to operate at Smith next year. It is the general impression of people who have tried to learn modern languages that the more frequently recurring the doses the greater the progress; not merely that you learn as much in six lessons a week for a year as in three lessons a week for two years, but that you learn 50 to 100 per cent. more because of the absence of loss of momentum that occurs in the intervals between the doses. Most of us when we think of the rapidity with which we pick up things in the language of a country in which it is spoken attribute this to the fact that we are hit by these things every minute and they do not leak out as fast as we receive them.

We are going to establish at Smith next year a set of courses in French, Greek, German, Italian and Spanish where the student will have six lessons a week, parallel with sections drawn from the same class and from girls of the same age who will have the same lessons three times a week. We shall give them each other's examinations and carefully correlate the results with a view to determining our future program in the now rather unsatisfactory academic pursuit of the foreign languages. It seems to me that if we do that sort of thing often enough with a large enough group we will be able to cancel to some extent the individual variation and know how elementary languages may be most effectively taught.

NATIONAL ORGANIZATION OF CHEMICAL EDUCATION

The American Chemical Society has issued an announcement urging the establishment of state and national organization among teachers of chemistry to promote the advancement of chemistry. The announcement was made through Professor Neil Gordon, of the University of Maryland, who is chairman of the society's committee on chemical education.

Professor Gordon emphasized the value of frequent meetings of teachers for professional improvement and referred to the activities of a few state societies which already "have wrought the greatest good for chemistry." The establishment of "similar organizations in each state or group of states" was urged.

In this way the chemistry teachers of the United States will be enabled to gather frequently and reach solutions of their local problems. Any solution which promises to be of wide application will, it is planned, be brought before the American Chemical Society's division of chemical education at its semi-annual meetings, the society thus acting as a clearing house for the national diffusion of the best thought in chemical education. It is felt that a national organization like this will be a mighty force in developing the chemistry of this country.

The society's committee has two other objectives in carrying out its nation-wide scheme of reform—national correlation of high school and college chemistry, and the organization of a national journal on chemical education. These three projects are being pursued simultaneously. According to Dr. Charles L. Parsons, secretary of the society:

Investigation has made plain the main difficulties which are standing in the way of the proper articulation of high-school and college chemistry. The two major ones are diversities of length and content of the high school courses and the different entrance requirements on the part of colleges.

The high schools are giving courses varying from twelve to forty weeks. Some schools are teaching only agricultural chemistry, some household chemistry, many a year of general chemistry, while others are teaching two years of chemistry, the last year being largely qualitative analysis.

In a word, we find that all types of chemistry are being taught, from no chemistry at all to chemistry which would compare very favorably with the best college chemistry.

SYMPATHY AND THE CERTIFICATION OF TEACHERS

In a letter to school officers and teachers of Illinois, Dr. F. G. Blair, state superintendent of

public instruction, recently quoted, without the use of the name, a letter from an applicant for a permanent teaching certificate which he regards as probably typical of the appeal frequently made to state and local boards in Illinois. The letter is from a woman who, when her husband died last March, obtained a teaching position in a rural school and has thereby been supporting her two children. She wrote:

I have written on the 'Teachers Examinations' twice but have failed. my memory is not so good as I wish it were. I have had a great deal of trouble but love teaching. everyone is well pleased with my work and I could get this school again or a third and fourth grade in town, both have been mentioned to me by the Directors but I have only an emergency certificate. The County Supt. issued me an Emergency Certificate thru sympathy and because the directors of this school and many others urged it.

Now Mr. Blair wont you please let me have a certificate without "Emergency" written on it for I just can't pass those awful examinations.

I taught two terms when I was seventeen and eighteen years old. Now I am fourty-six.

Superintendent Blair presents in his open letter the question, What shall be the standard for the certification and appointment of teachers? He refers to the early days in public education when it was a general practice to select as teachers men who had some physical handicap "on the assumption that school teaching was an indoor occupation and required the minimum of physical health and completeness."

The situation has changed. Eighty-three per cent. of our teachers are women. Most young women, looking forward to teaching school, try to prepare themselves in a very conscientious and thoroughgoing way for the work. There still remains, however, the old idea that in selecting a teacher certain charitable ends should be kept in view. Every attempt to lift the scholastic and professional requirements for teachers in Illinois has met with the statement that higher standards will keep the poor man's daughter from teaching, overlooking entirely the fact that there is much greater charity, much more of the milk of human kindness, much more of sound common sense in trying to secure for poor men's children the very best teacher that can be had rather than in trying to get for a poor man's daughter a job for which she is not qualified.

Dr. Blair cites the letter quoted above as showing "what strong appeals can be made to the hearts of the certificating authorities and boards of education to relax or set aside the plain requirements of the law and to forget or subordinate the primal interests of the children who are to be taught."

NEGRO COMMUNITIES IN TIDEWATER VIRGINIA

How negro communities may, through the pooling of interest and resources toward common ends, improve their homes, churches and schools, hold the young people in their rural homes, and develop community life, is shown in a study, "Three Negro Communities in Tidewater Virginia," recently made by Allen B. Doggett, Jr., instructor in farm management and rural sociology in the Hampton Institute Agricultural School, and published by Hampton Institute in its bulletin series.

The surveys were made in cooperation with the Division of Farm Population and Rural Life, which is in charge of Dr. C. J. Galpin, Bureau of Agricultural Economics, U. S. Department of Agriculture. The 46-page bulletin contains diagrams of Little Forks, Ebenezer and Ruthville, Virginia, as well as photographs which show what is being done by the colored people to secure better schools, homes and churches. Excerpts from the bulletin follow:

Little Forks has developed leaders within itself who have carried the community to a high point. The community has backed its leaders without suspicion or jealousy. . . . The consolidation of the four neighborhood schools brings the educational facilities of the community into step with modern educational advancements. Special group activities within the community interest the boys, the young men, the housewives and girls, and the heads of families. . . .

Little Forks has long been living from its own garden and smokehouse, and feeding its stock from its own stack and corn crib. The progress in school, church and home has been backed by corresponding agricultural development. . . .

Ebenezer is a growing community, like hundreds of others in the Southland. It is not just getting along. Its preacher for ten years taught the gospel of home-owning, better farming, and a decent school. The awakening of Ebenezer shows what one large-calibre man can start. The work done

by all the patrons in securing the new school has made one solid group out of 26 families.

Aside from the social life of the lodge little is yet being done as a community to satisfy its recreational needs. The community is progressing in its agricultural practices. Its attitude is receptive rather than suspicious toward progressive farm experience.

The binding institution of the Ruthville community has been the church for over one hundred years. The establishment of the county school in Ruthville is the result of a fixed determination to gain educational opportunity for the community and county. The good school has brought and kept good teachers. Groups interested in special work have developed ability to do things together easily, to the benefit of the entire community.

Detailed descriptions are given of the constructive work which is being done through patrons' leagues, mothers' clubs, boys' and girls' clubs, farm boys' building and loan associations, cooperative marketing associations, lodges and fraternal orders and farmers' community clubs.

A NEW SCHOOL OF BUSINESS AT MICHIGAN

A PRELIMINARY announcement of the requirements and proposed work of the School of Business Administration, recently created by the board of regents of the University of Michigan, was issued recently. It is to be a graduate school to the extent of requiring at least three years of regular college work for admission.

The aims of the school as set forth are: First, to train in the basic principles of management; second, to afford training in the use of quantitative measurements in the solution of management problems, and, third, to assure education in the relationships between business leadership and the more general interests of the community, as represented by both public and private agencies.

Three years of regular college work is the minimum requirement for entrance to the School of Business Administration. The school will grant a degree of master of business administration upon completion of two years of work under its supervision.

In addition to courses which are being transferred from existing departments of the university to the new school, new courses established include work in sales management, financial management, personnel management, accounting, business statistics, bank management, retail store management and realty management.

MEDICAL COLLEGE CONSOLIDATION AT CHICAGO

THE Rush Medical College, Chicago, has recently consolidated with the University of Chicago. Details as to plans for this merging were announced recently by President Ernest DeWitt Burton. He stated that the enlarged medical work will be organized under three schools:

The Rush Medical College of the University will continue to prepare students for the M. D. degree on its old site on the West Side, until the Graduate School of Medicine of the University is fully organized on the quadrangles on the Midway. The Rush Post-Graduate School of Medicine is to be housed with the Rush Medical College in the new Rawson Laboratory on the West Side, which will train persons already holding the M. D. degree in medical research and the various fields of medical practice. The University School of Medicine will be housed in the new Medical Buildings at the University of Chicago, and will prepare students for the M. D. degree. This school is now being organized by Dr. Franklin C. McLean, professor of medicine, and Dr. Dean D. Lewis, professor of surgery, in conference with other medical authorities. When this school is in full operation, it is expected that it will absorb the work of the Rush Medical College. The two permanent institutions will be the Rush Post-Graduate School of Medicine on the West Side and the Graduate School of Medicine at the University.

The university will proceed at once with the erection of the necessary buildings.

EXTENSION COURSES FOR TEACHERS OF THE UNIVERSITY OF MISSOURI

THE University of Missouri announces a new departure in state-wide educational facilities by means of extension courses, primarily for the benefit of high-school teachers, in virtually every city and town in Missouri where there are possibilities for competent instruction.

It is proposed to make it possible for teachers to take university work in various sections of Missouri and to receive credit toward a degree from the State University and toward fulfilling the requirements for teachers in the public schools of the state.

A change by the State Department of Educa-

tion in requirements for high-school teachers by which the standard has been raised for every class of high school has made it desirable to give opportunity to the greatly increased number of teachers whom it is thought will desire to secure university credit.

The lecturers who conduct the extension courses will be selected on a basis similar to that of regular members of the faculty and will be themselves members of the faculty. They must be passed by the dean of the school or college in which courses are given, the chairman of the department under which courses come and the director of university extension.

It is planned that the classes in the various places to be chosen will be held as often and conducted exactly as classes in the university. It is provided that in "the case of students who have never been regularly enrolled at the university, the credit will be held in abeyance until such time as the student has completed in residence at the university an equal amount of hours' work." In other words, teachers who need university work for their high-school teaching requirement can take courses under the new plan and later get credit by taking work up to an equal amount in residence. Those who have already attended the university can obtain credit in the extension courses up to the amount carried in residence in the university.

CONSERVATION OF EYESIGHT AND INDUSTRIAL ACCIDENTS

ORGANIZED eye conservation has reduced accidents in the plant of E. I. du Pont de Nemours & Company, of Wilmington, Del., according to the Eye Sight Conservation Council of America, which, from its national headquarters in New York, is directing a survey of American industries. The du Pont Company is one of a group of leading concerns which states that systematic effort is being carried on in this field of prevention.

If men were employed at random and put at work without an examination, it can readily be seen how easily a man with one eye or with poor vision could be given work around acids and caustics in a chemical plant, which would constitute a very great risk for the employer and a grave injustice to the employee.

Eye examinations were started at the Wilmington plant five years ago; 1,578 employees of the dye works have received eye examinations. It is the practice of the company to encourage all the plants to provide goggles for the individual worker.

At the dye works eye protection is promoted by a Works Safety Committee and penalties are imposed for failure to comply with the rules issued by the committee. Due to the vigilance of this committee, the eye accident reduction rate for the period during which the eye protection campaign has been functioning is 66 2/3 per cent. There were only three lost time eye accidents during the first six months of 1923.

Since approximately twenty-five per cent. of the work of the plant throughout the year is done with artificial light, thoroughly up-to-date equipment is used to provide proper lighting. This matter is under the control of the electrical division of the engineering department.

Full advantage is taken of daylight wherever possible. The proper size lamps and the distribution of the light is determined by scientific study. When deemed advisable, walls and ceilings are painted to improve the lighting system. Each building in the plant is required to keep a check on its lighting equipment, defects, rearrangements, etc., and to report to the electrical division.

It is estimated by the Eye Sight Conservation Council that 25,000,000 gainfully employed Americans are suffering from defective vision, to which the Hoover Committee of the Federated American Engineering Societies attributed great waste in industry.

EDUCATIONAL NOTES AND NEWS

HERBERT S. LANGFELD, professor of psychology at Harvard University, has been appointed director of the new psychological laboratory at Princeton University. Dr. Langfeld served as secretary of the American Psychological Association from 1917 to 1920.

DR. A. C. SEWARD, master of Downing College and professor of botany, has been elected vice-chancellor of Cambridge University for the academic year beginning October 1, succeeding Dr. E. C. Pearce, master of Corpus Christi College, who will have held the office for three years.

ALEXANDER DUNLOP LINDSAY, professor of moral philosophy in the University of Glasgow, and formerly fellow and classical tutor of Balliol College, Oxford, has been elected master of Balliol in succession to the late A. L. Smith.

Virginia C. Gildersleeve, dean of Barnard College, has been nominated as a candidate for the presidency of the International Federation of University Women to succeed Professor Caroline F. H. Spurgeon, of the University of London. Miss Gildersleeve will attend the conference of the federation at Christiania, July 28 to August 1, as one of the five voting delegates from the American Association of University Women.

The degree of doctor of science has been conferred by Syracuse University upon Ray Lyman Wilbur, president of Leland Stanford University.

David Kinley, president of the University of Illinois, was awarded the degree of doctor of laws by Yale University.

Wilberforce Eames, of the New York Public Library, has received the degree of doctor of laws from the University of Michigan, and the degree of doctor of letters from Brown University.

In recognition of his forty years of teaching, Harry Norman Gardiner, professor of philosophy at Smith College, was awarded the degree of doctor of laws by the college.

The degree of doctor of laws has been conferred by Harvard University upon Harold Dexter Hazeltine, Downing professor of the laws of England at Cambridge University.

Dr. Carl F. Eyring, of the California Institute of Technology, has been appointed dean of the college of arts and sciences at Brigham Young University, and L. John Nuttall, director of training schools at the university, has been appointed dean of the college of education.

Dr. R. F. Ruttan, director of the department of chemistry at McGill University, has been appointed dean of the faculty of graduate studies and research to succeed Dr. F. D. Adams, who has resigned from the university.

George C. Fracker, dean and head of the department of psychology at the University of Dubuque, has been appointed professor of psychology and philosophy at the University of Arkansas.

Fletcher H. Swift, professor of education at the University of Minnesota, has been appointed visiting professor of educational administration in Teachers College, Columbia University, for one year. He will lecture on educational finance.

Herbert W. Rogers, assistant professor of research at the University of Minnesota, will be associate professor of psychology at the University of Vermont next year.

Professor Guy V. Price, for the last two years a member of the faculty of the College of Emporia, has been made head of the department of education of the same institution, to become effective September 1.

P. J. Baker, of Cambridge University, has been appointed as from August 1, 1924, to the Sir Ernest Cassel Chair of International Relations tenable at the School of Economics of the University of London.

Palmer Bevis has been appointed executive secretary of Yale in China. He succeeds Herbert H. Vreeland.

Randall J. Condon, superintendent of schools of Cincinnati, who was granted a leave of absence for one year to join the editorial staff of the *Atlantic Monthly*, has been re-elected superintendent for a term of five years. Assistant Superintendent Roberts will be acting superintendent for 1924–25.

Charles A. Kofoid, professor of zoology at the University of California, delivered the commencement address at the University of Washington.

Professor Godfrey Thompson, visiting professor from Armstrong College, Durham University, Newcastle-on-Tyne, England, a specialist on educational measurements and tests, is giving several courses in educational psychology at Teachers College, Columbia University.

Professor Frank L. Clapp, of the school of education of the University of Wisconsin, gave a two-week series of lectures this month at the Western Colorado State College for Teachers, at Gunnison, Colo., and a one-week series at the Northern Normal Industrial School at Aberdeen, S. D. The subject of his lectures at both schools was "Psychology of the elementary school subjects."

Theodore Collier, who holds the chair of history and international relations at Brown University, will lecture on history in the Con-

stantinople Women's College for the next academic year. In addition to his teaching, Professor Collier will study at close range some of the major problems confronting the Near East.

J. L. PATON, who will retire from the position of high master of Manchester Grammar School in July, has accepted an offer of the Canadian Council of Education to undertake special educational lecturing propaganda work in the Dominion for at least a year. He will begin his new duties in October.

DR. CHARLES KELSEY GAINES, of St. Lawrence University, Canton, N. Y., has been granted leave of absence for a year, with salary, in recognition of his forty-five years of service.

DR. ROBERT DAY WILLIAMS, professor of philosophy and experimental psychology at Pomona College, will be on sabbatical leave during the coming year. He will devote most of his time to making a study of psychological laboratory work in eastern universities.

S. WARREN DAVIS, head of the department of Latin of the Newton High School, Newton, Mass., has retired after forty-four years of teaching.

DR. THEODORE LYMAN, Hollis professor of mathematics and natural philosophy at Harvard University, has been elected president of the American Academy of Arts and Sciences.

DAVID ALLAN ROBERTSON, professor of English at the University of Chicago, has been appointed assistant director of the American Council on Education to develop the work of the council in the field of international educational relations. In cooperation with the Institute of International Education, the committee on the American University Union, and numerous other agencies operating in this field, he will devote his entire time to formulation of effective foreign policies and simplification of administrative machinery for their realization. He will take up his new work in September.

DR. MARY MILLS PATRICK, retiring president of the American College for Girls in Constantinople, was received by King Boris, of Bulgaria, and decorated with the Order of Women, first class. The king thanked her for her long service to the women of the Near East, by which Bulgarians had greatly profited, adding that her thirty-four years in the presidency would not be forgotten.

HENRY JUSTIN SMITH, news editor of the Chicago *Daily News*, has been appointed "assistant to the president in charge of public relations" at the University of Chicago.

PROFESSOR LINDSAY ROGERS, of the department of political science of Columbia University, has been designated by Governor Smith, of New York, a member of the advisory commission whose task it is to try to prevent the threatened strike of 50,000 garment workers.

DR. EDWIN F. GAY, formerly president of the New York *Evening Post*, who recently resigned as a member of the board of overseers of Harvard University to accept an appointment as professor of economic history at Harvard, has been elected a member of the research staff of the National Bureau of Economic Research, with the title of director.

PROFESSOR JOHN L. BAER, an anthropologist of the Smithsonian Institution and a member of the faculty of George Washington University, died on May 28 in southeastern Panama, where he had gone as a scientific member of the Marsh expedition, which left New York in January to study the so-called "white" Indians of Darien.

DR. HUBER G. BUEHLER, headmaster of the Hotchkiss School of Lakeville, Conn., since 1904, and one of the leading secondary school headmasters in the country, died from heart trouble on June 20.

ALUMNI and faculty of the Yale School of Law celebrated the one hundredth anniversary of the founding of the school on June 16. Attorney-General Harlan Fiske Stone, George Woodward Wickersham, of New York City, attorney-general during the Taft administration, and Theodore Salisbury Woolsey, emeritus professor of international law, gave the principal addresses, with Dean Thomas W. Swan presiding. The gift of $500,000 from Harold Depew, of Elizabeth, N. J., a graduate of the class of 1906, was announced. Details of the plan to honor the memory of the late President Woolsey, of Yale, and his son, Professor Theodore Dwight Woolsey, who has just retired after nearly forty years' service as professor

of international law, were announced as consisting of the creation of a Woolsey professorship of international law. Dean Swan said it was planned to establish chairs bearing the names of two former members of the law school and faculty—of Simeon E. Baldwin, formerly governor and chief justice of Connecticut, and William Howard Taft.

THE eighth convention of the American Federation of Teachers will convene at Chicago on June 30.

IN connection with the meeting in Washington, D. C., of the 15,000 or more educators attending the National Education Association convention, June 29 to July 4, the National Geographic Society will hold two notable geographic conferences, on the afternoons of July 1 and July 3.

SPONSORED by the Massachusetts Institute of Technology, a working conference in health education was held June 23–28, at Cambridge, Mass. The conference was called by the health division of the American Child Health Association.

THE General Electric Company is arranging for a conference of college professors to be held at its Schenectady works from July 7 to August 9. It is the plan to have each professor spend the greater part of his time in the department in which the work most closely coincides with his interests. Twice a week visits of inspection will be made throughout the plant, followed by round-table conferences with General Electric engineers.

PRESIDENT LOWELL has announced bequests to Harvard University amounting to $5,158,000, supplementing the report of Bishop Lawrence, made to the alumni at their annual meeting, in which gifts of $9,289,595 were announced.

A GIFT of $320,000 to Princeton University has been announced by the Milbank Memorial Fund. This sum will cover the entire cost of construction of the choir planned as a memorial to Elizabeth Milbank Anderson, a pioneer in modern philanthropy, who before her death in 1921 founded the Milbank Memorial Fund to "improve the physical, mental and moral condition of humanity and generally to advance charitable and benevolent objects." Of the $14,000,000 sought for the Princeton endowment fund, $8,230,212 has been paid, according to announcements made on commencement day. Contributions to the fund for the new chapel total $1,120,000, leaving $400,000 to be raised.

A GIFT of $500,000 to Wellesley College from Colonel Edward H. R. Green, of New York City and Texas, and his sister, Mrs. Matthew Astor Wilks, also of New York, was announced at the Wellesley commencement exercises. The gift is to be used for the erecting of a new administration building, to be named Hetty H. R. Green Hall, in honor of the mother of the donors.

NORTHWESTERN UNIVERSITY received $50,000 from Mrs. Joseph Schaffner, widow of Joseph Schaffner, of the wholesale clothing firm of Hart, Schaffner and Marx, for the establishment of a library in the proposed new Commerce School building.

TO acquire sites, buildings and school construction, the Committee of the Whole of the Board of Estimate of New York City on June 16 voted to appropriate $15,000,000.

FIFTY $500 scholarships have been awarded to teachers in 47 cities throughout the United States by the committee on awards of the teacher scholarships and fellowships of the American Child Health Association. The decisions of the committee were determined "not only by concrete examples of the teacher's work submitted but also by her teaching record, her achievement in carrying health education into the home and in correcting the physical defects of her pupils."

WINNERS of the second annual award of the four $1,000 scholarships for studies in diplomacy, international affairs and belles-lettres, provided for in the will of the late Frederic Courtland Penfield, ambassador to Austria, are announced by Dean E. B. Babcock, of the Graduate School of New York University. The scholarships this year go to Edward P. Lawton, Jr., of Savannah, Ga., a student in the University of Georgia; Francis E. Taylor, of Eugene, Ore., a student in the University of Oregon; Charles S. Weber, a graduate of Coe College in Iowa, and Miss Mildred Moulton, a graduate of the University of California.

THE winners of the fifteenth American School Citizenship League World Essay contest will

be made known in early October by the board of judges. Two sets of prizes, known as the Seabury Prizes, were offered for the best essays on the following subjects, one, open to students in normal schools and teachers' colleges: "Methods of promoting world friendship through education"; second, open to seniors in secondary schools, "The organization of the world for the prevention of war." Three prizes of seventy-five, fifty and twenty-five dollars will be given for the three best essays in each set. An interesting phase of this contest is the cooperation of some of the European governments in the efforts of the league to extend the writing of essays on the subjects assigned in this contest to the students of secondary and normal schools throughout the world. Seven Czechoslovak students entered the contest this year. The best essay, as judged by the Central Union of Czechoslovak Professors and translated into English by that body, has just arrived at the office of the American School Citizenship League.

FOR the first time in its history, the Massachusetts Institute of Technology will give courses at its summer session in methods of teaching senior and junior high school mathematics in addition to other courses, also intended for teachers, in science and drawing. The mathematical courses will be in charge of Walter F. Downey, headmaster of the Boston English High School and a member of the National Committee on Mathematical Requirements. He is to be assisted by Miss Olive A. Kee, of the Boston Normal School, who will direct a demonstration class in junior high school mathematics. The summer session will open July 7, and will end August 1.

SPECIAL CORRESPONDENCE

HOW THE DILLON PUBLIC SCHOOLS COOPERATE WITH THE COLLEGE

FOR over twenty years School District Number Ten, Beaverhead County, has had a working agreement with the Montana State Normal College whereby the grade schools are the training center for normal college students. The district has built and equipped the buildings. The district bears all expense of the upkeep of the buildings and furnishes heat, light, water and janitor service. The district pays the major portion of the salaries of the room and critic teachers. The college reimburses the district by paying all the salaries of teachers of special subjects, such as art, penmanship, music and physical education, and the kindergarten teacher. The salaries of the school nurse, the home economics and manual arts teachers as well as the superintendent's salary are divided between the school district and the college.

There are about 600 children enrolled in the eight grades and kindergarten. These pupils are housed in two modern, well-equipped buildings. Twenty teachers are employed to furnish them instruction. This means that there are seldom over 30 pupils enrolled in one room. Seventeen (including kindergarten teacher) of these teachers are classed as critics and three as room teachers. In addition to these 17 critics there is a primary supervisor who acts as a principal of one building; an intermediate grade supervisor, and a grammar grade supervisor who acts as a principal of a building and the director of training.

The director of training is also the city superintendent of schools and is paid mainly by the college, receiving only a small amount of his salary from the school district. Each month the superintendent makes a detailed report of the work done during that month to the five members of the local school board and to college authorities.

With a music director, a physical education teacher, a penmanship specialist and an art teacher, as well as the home economics and manual training teachers, the pupils receive instruction in all the "specials" that are taught in the best organized city schools. The school nurse has done some excellent work in correcting defects and preventing contagion. For four years there has been practically no contagion in Dillon.

The strongest feature of the organization is the cooperation between the people of the community and the college. The boast is that the normal training is done under public school conditions. This is true. The 20 home rooms are so arranged that adjoining each one is a recitation room. The assignments for directed teaching are for 12 weeks of one hour each day. Students are required to do two quarters of directed teaching. In no single period are more than two student teachers permitted in one

room. By careful assignment as many as 150 practice teachers may work and still not upset the regular school room organization. With two students working, the critic can easily go from one to the other or stand in her doorway and see what each is doing. This plan permits supervised study in every grade. All seat work is carefully planned. During the one hour of directed teaching the student in training is the teacher. These students meet their critics daily to work out plans in detail and once each week they have a special conference at which time the requirements of the Montana state course of study are gone over and plans worked out to cover a unit of work. All plans are made on the unit of subject-matter and the daily assignment basis. The plans are checked by both critic teacher and supervisors.

Before being permitted to take up directed teaching, students must have completed the subject-matter courses, such as arithmetic, reading, geography, grammar, composition, American history, government and drawing, as well as the courses in principles of education, school law and management and methods of teaching. The method courses are presented by the supervisors who have daily contact with the school. All this group are still "public school minded" and do not at any time let their fanciful dream ideas and ideals override their common "horse sense" judgment as to the right way to run a school.

Besides the two quarters of twelve weeks, one hour a day, the students may take up four special subjects from the teaching standpoint. Two of these are taken each quarter during the training period and a small credit (one half credit each) is allowed towards graduation in addition to the regularly required eight credits.

The grading and rating of student teachers falls largely upon the critic teacher because she has longer and more intimate contact with the student. In grading, the critics consider personal qualities as vitality, manner, appearance, temperament, poise; social fitness, including originality, responsibility, cooperation and reaction to suggestion; power of administration, taking in discipline, use of time, room management and movement; teaching ability in the way of motivation, use of illustration, questioning and fixing of results; scholarship, including knowledge of subject-matter, use of English and proficiency in spelling and penmanship.

The student teacher is made to feel that the successful work of the room depends upon her and for that reason she is given full control of discipline and all details of management. If after a careful trial it is discovered that a student is not doing good work in a particular subject she is allowed to change to another room —perhaps in another department. The teaching of many subjects during the training period is discouraged because frequent changing of teaching personnel always breaks up the organization. Every boy and girl in school has to try out the "new student teacher," but by feeling confident that she will be backed in her exercise of authority in discipline the student soon gets control of the situation. The doing of the task time after time is more important than trying several different things in a short period, so we feel that the plan of teaching one subject or two in one room for twelve weeks is more valuable to the student teacher than teaching several.

The discipline is a remarkably easy problem. This is due to the fact that the presence of student teachers has not disrupted organization and that every one connected with the work of training teachers has at all times kept the needs of the children above the advantages to be gained in trying out new educational problems. The school has the same problems of undernourished, backward pupils, extra bright boys and girls and unruly spirits that are found in any American community and all these problems are attacked as nearly as possible in the same manner as they are in communities where student training is not a part of the school program.

The expense of teacher training is greater in the Montana State Normal College than in many of our teacher-training institutions, but the expense is justified when we consider the fact that the training is under as nearly ideal conditions as are possible; conditions where "public school" and not "model school" programs are carried out; conditions where school and community work in harmony; conditions where all training is real and not make-believe.

If the plan of organization has serious faults, 20 years would have brought them out. Instead, the 20 years of trial have sold the "plan" to the local community and the state as well.

Linden McCullough

DISCUSSION

THE RELATIVE VALUE OF LABORATORY INSTRUCTION

AN article in SCHOOL AND SOCIETY, Vol. XIX, No. 490, May 17, 1924, p. 589, says that "Great sums of money are expended annually for the upkeep and equipping of laboratories that are used only for teaching. . . . And yet there is no experimental data available to definitely indicate whether the expenditure of time or money is or is not justified."

The author cites three experimental investigations as the only ones bearing on this problem and these he considers inconclusive. They are Mayman's, Wiley's and Kiebler and Woody's. The first of these did not deal with the laboratory method but with the relative value of the book method, the lecture method and the lecture-demonstration method. Along this same line may be cited Hunter's recent experiments on the relative value of the book, lecture and developmental methods. (*School Science and Mathematics*, Vol. XXII, pp. 875–890, and Vol. XXIII, pp. 20–32.)

An experimental investigation of the relative value of the lecture-demonstration and laboratory methods of instruction was made by Harry Cunningham and is on file as a master's thesis in the Department of Natural Science, the University of Chicago. An abstract of his results also appeared in the *Proceedings* of the Illinois Academy of Science, 1920. J. L. Cooprider also did his master's thesis on a similar investigation here. An abstract of his results appeared in *School Science and Mathematics*, Vol. XXII, p. 838, December, 1922. A second investigation confirming the results of the first was reported by him in the same journal, Vol. XXIII, p. 526, June, 1923. Now another thesis on the same topic is completed by Fred G. Anibal and will be reported shortly.

All these experiments in the method of presentation of science subject-matter have shown the same thing, namely, that, as far as imparting information to students is concerned, the lecture-demonstration is quite or nearly as efficient as the laboratory method and when economy of time and material is taken into consideration it is a much more efficient method.

Such a blanket statement is a tentative one. In time the numerous factors involved in the problem will be untangled. The investigations above cited begin to do this and show that the character of the directions, whether verbal or written, the general ability of the pupils, the complexity of the experiment and other things must be considered. We shall know enough, as investigations multiply, to state under what conditions, with what types of pupils, and in what sorts of subject-matter the lecture-demonstration method is superior to the laboratory method or the reverse.

But certainly enough has already been accomplished to show that we adopted the laboratory method, in secondary schools at least, without adequate evidence of its value. It is less than a century since laboratory work was introduced into this country largely because our candidates for higher degrees, studying abroad, found it in vogue in the German universities. Slowly the method was adopted in the universities for medical students and finally for general students. It was not until the eighties of the last century that it began to spread with any rapidity into the secondary schools. Now universities are prone to judge the fitness of secondary schools for giving science largely in terms of the extent of their laboratory equipment—a totally unwarranted assumption.

It is the writer's opinion, in view of the results of these investigations, that students waste an inordinate amount of time in the laboratory. General courses in science which aim to impart information, stimulate appreciation and establish a point of view rather than develop skill, both in secondary school and college, may well rely chiefly on the lecture-demonstration or the developmental method of instruction.

Caldwell showed (O. W. Caldwell, "The Gary Public Schools. Science Teaching," General Education Board, 1919) that while pupils see what is done in an experiment very well and what happens reasonably well they make a very poor showing on the interpretation of the results. Other investigations amply confirm this. It seems to be the weakest spot in science instruction. The investigations referred to above show that the percentage of correct interpretation of results is higher in the lecture-demonstration method than in the laboratory method of instruction. The pupil, especially if the experiment is somewhat complicated, is so absorbed by the manipulation and procedure that he can take little time to think what it all means. In the demonstration he is relieved of all respon-

sibility of the conduct of the experiment and is free to observe and interpret results.

European secondary schools give science instruction by the lecture-demonstration method almost entirely except in those schools which are distinctly prevocational, in which the pupils are going into lines of work demanding skill. Then they do laboratory work.

It seems probable that even in the acquisition of skill the demonstration method is preferable, at least in the initial stages. The student learns technique more readily by watching a skilled manipulator than he does by following printed laboratory directions. The would-be surgeon watches for a long time the skillful operator before he tries his own hand at the operation.

ELLIOT R. DOWNING

SCHOOL OF EDUCATION,
UNIVERSITY OF CHICAGO

QUOTATIONS

STANDARDS OF VISION IN EDUCATION

THERE is evidence that difficulties have arisen in various parts of the country with regard to the admission of children to scholarships given by local education authorities, and with regard also to the admission of candidates for training as teachers and to teacherships. In the *Journal* of January 13, 1923, there was published a paper by Mr. Bishop Harman on this subject; in this he gave the evidence upon which was based the necessity for some selection of candidates, and also a table of suggested standards of visual requirements at different ages. The paper was read at a meeting of the ophthalmological section of the Royal Society of Medicine, and after a discussion thereon it was resolved by the section to request the Council of British Ophthalmologists to appoint a special committee to inquire into and report on the advisability of establishing "standards of vision for candidates for scholarships and teacherships under local education authorities." The council has now issued an agreed report.[1] In this it is stated that in the interests of the community and of the individual it is important that scholarships and teacherships should not be granted to candidates suffering from such ocular defects as may be aggravated by long-continued study and lead to inefficiency or incapacity in later life. It is therefore advisable to establish, if practicable, standards of vision which shall exclude unsuitable candidates; the standards should not be fixed so high as to exclude any appreciable number who might in practice prove fit. Cases of myopia are those of the greatest difficulty, so that the degrees of admissible myopia and the risk of excessive degrees are commented upon in some detail. A report of this nature will without doubt be of the greatest value to school medical officers as well as to all doctors who are asked to advise upon the education of children and young persons. The council recommends that in all candidates for scholarships and teacherships the visual acuity, with correcting glasses, should be not less than 6/9 in the better eye. A child of 11 with less than two dioptres of myopia in either eye should be passed. A child of 11 with more than two and less than three should be passed on probation and reexamined every six months. A child of 11 with three or more dioptres of myopia in the better eye should be rejected for scholarship training. At the age of 15 those with more than four dioptres of myopia in the better eye should be deemed unfit to train for the teaching profession. Candidates for entry to training colleges, who are, as a rule, about 18 years of age, if they have more than five dioptres of myopia in the better eye should be rejected. It is considered that simple myopic astigmatism exceeding three dioptres in the better eye should be a cause of rejection of candidates both for scholarships and for training as teachers. In compound myopic astigmatism, unless the myopia is stationary, astigmatism of even two dioptres may be a cause of rejection. Cases of hypermetropic astigmatism should be rejected only if visual acuity with correcting glasses in the better eye is less than 6/9. Hypermetropia should not be a cause of rejection unless vision with correcting glasses in the better eye is less than 6/9. Certain special cases also are dealt with. Thus, if the applicant has only one eye or only one useful eye, the other being amblyopic from non-progressive disease which in no way affects or is likely to

[1] Report on Standards of Vision for Candidates for Scholarships and Teacherships under Local Education Authorities. London: The Office of the *British Journal of Ophthalmology*, Thayer Street, W. 1.

affect the good eye, the case should be judged on the condition of the good eye. In the case of candidates for university and technical senior scholarships, or those intending to specialize as teachers of certain technical subjects, greater latitude may be allowed after consideration of special circumstances as to nature of work and condition of the candidate's eyes in other respects.—*British Medical Journal.*

BOOKS AND LITERATURE

How to Make a Curriculum. By FRANKLIN BOBBITT. Houghton Mifflin Company, 1924. pp. 292.

AT the last annual meeting of the Department of Superintendence held in Chicago, 17 out of 73 sessions, nearly one fourth, devoted a part or the entire time to the discussion of the curriculum. Seven sessions were devoted completely to the curriculum, particularly to its reconstruction. This testifies to the timeliness of Professor Bobbitt's book.

It is a practical book because it presents the plan of approach to the problems of curriculum improvement employed by the author in Los Angeles. The broad range of human experience is analyzed into ten major activities—language, health, citizenship, social, spare time, religious, parental, unspecialized, keeping oneself mentally fit and the labor of one's calling. The major activities are then analyzed into their more specific activities.

The major units of activity and their larger subdivisions represent the general opinion of "objective-minded" observers. In the case of the author's analysis the observers were some 2,700 graduate students and high school teachers.

This analysis of life activities furnishes the objectives of education which are abilities to perform these activities. The curriculum consists of the pupil's activities and experiences. The aim of the school is not to help the pupil to master subjects but to attain the simple, familiar, every-day abilities.

The early chapters are devoted to a consideration of the problems and principles which grow out of the author's plan of curriculum reorganization. The nature of the proposed school activities is discussed and a method of designing them is briefly presented. General education consists first of foundational education which is directed but which is not conditioned by specific functions. Second, it consists of functional education which is guided by specific objectives such as proposed later in the book.

The later chapters are devoted to a discussion and an enumeration of the objectives of the traditional subjects—literature, social studies, natural science, mathematics, physical development, practical arts, music and language. From the objectives ascertained by analyzing the major fields of life activity such are selected which properly fall into the category of literature, music, etc. There is no evidence to show that the author particularly approves the artificial reclassification of life activities into subject activities. One suspects from his general discussion that it is a concession to expediency, similar to that which Professor Bonser made in his book on the elementary curriculum, explaining in a foreword that a subject organization of school activities is an intermediate step in the interest of progress.

This book is a transition book. The author's work is not done. It is obvious that he is still at work on the problems of curriculum making. Growing out of the follow-up work in Los Angeles and the author's present work in Toledo, one expects a later book giving more completely the inventories of more specific activities of life. One expects, too, that the program of pupil activities and experiences will be ascertained in greater detail for all the subdivisions of the curriculum. And, finally, one hopes that the author will have an opportunity to experiment with and report on an organization of the curriculum based on life activities.

Curriculum studies based upon quantitative evidence may be classified according to the nature of this evidence. First, it may consist of a direct survey of the actual needs of a specific group of learners, as was W. W. Charters's analysis of the language errors of the pupils of the Kansas City schools. Second, it may consist of secondary quantitative data describing the actual needs of a group of people, as was the Minneapolis survey for vocational education. Third, it may consist of data setting forth what a selected group of qualified persons *think* are the outstanding needs, as was Professor Bobbitt's curriculum

study. Since Professor Bobbitt makes no scientific claim for his procedure it is not fair to condemn it as unscientific. This reviewer, however, dissents from Professor Bobbitt's opinion (page 9, last paragraph) that all that is needed in analyzing the major fields into their larger subdivisions is simple observation, when there is virtual unanimity among objective-minded analysts.

Professor Bobbitt, however, is entirely in sympathy with the quantitative curriculum studies which have been made. In effect, he proposes numerous problems of scientific investigation for the local departments of education and for specialists in curriculum making.

The author entertains no illusions about what the school can accomplish. For example, the shops which look so attractive to the visitor and which are such a seductive screen for progressive education are not accepted by Professor Bobbitt without subjecting them to the functional test. At no time, with the possible exception of the modern languages, does he compromise his main thesis: "That education is to prepare men and women for the activities of every kind which make up, or which ought to make up, well-rounded adult life; that it has no other purpose; that everything should be done with a view to this purpose; and that nothing should be included which does not serve this purpose."

The work is brief, succinct and tabular, yet it is unusually readable. It is well written, yet it is free from literary affectation. The author has too much solid material to convey to be verbose. On the whole the book is not vague and general. With the exception of the discussion of foundational and functional education the author is clear and forceful.

HENRY HARAP

ANTIOCH COLLEGE

EDUCATIONAL RESEARCH AND STATISTICS

PREDICTING SUCCESS OR FAILURE IN COLLEGE AT THE TIME OF ENTRANCE

IN SCHOOL AND SOCIETY for April 1, 1922, a report was given of a study designed to test whether the combination of several kinds of information would make it possible to predict what individuals would fail to carry college work successfully, and what students would carry their work with distinction. The general result of the study was encouraging to further efforts, although the reliable prediction for the group studied included only a small number of students. The measures used in that study were high school scholarship, psychological tests, the proportion of advanced studies taken in the high school and the marks on the first three themes written in freshman English in college. These factors are named in the order of their relative value as shown by later experience. The English themes have low predictive value with reference to general success in college work. The fact that the student selects advanced or elementary studies during his high school course has a certain predictive value, but this has not proved as important in the later groups studied as in the first one.

In the studies now reported only the high school standing and the psychological test scores are taken into account. Other sources of information are still considered worthy of further study, but it is thought worth while to show the results that can be obtained by the comparatively simple procedure involving these two measures alone.

The groups of students included in this study are graduates of Minneapolis and St. Paul high schools who entered the college of liberal arts of the University of Minnesota in the fall of 1921, 1922 and 1923, respectively. In 1921 all students coming to the college from all public high schools in the Twin Cities were included. In 1922 and 1923, graduates of the University High School and those of three small city high schools were omitted.

In using the high school standing the only dependable guide is the relative standing or rank of the individual in his class. In the 1921 class, as in the previous study, the high school records were secured for only those students who entered the college. Those from the same school were placed in rank with reference to one another. The number of students coming from the different high schools in 1921 were: 8, 14, 26, 27, 38, 39, 47, 71, 84, 97. In the 1922 and 1923 classes the average grades of all the students graduating from the high schools in June were calculated and the students who came to college were given the ranks which they held in

their entire respective graduating classes. The classes thus studied in 1922 numbered 163, 201, 235, 255, 269 and 318; total, 1,441 students. In 1923 the classes numbered 193, 237, 266, 282, 290 and 303; total, 1,571 students. The numbers coming to this college and included in this study were, in 1921, 435; in 1922, 280; in 1923, 315. Only those students were taken for comparison who graduated from the high school in the same class. A few students who did not take the psychological tests, and those whose high school records were incomplete or irregular on account of migration from one high school to another were omitted from the study. In all the classes the relative high school standings were converted into a percentile ranking.

The psychological tests were those given to all freshmen at the time of entrance. In 1921 the tests were given under the direction of Professors Miller and Van Wagenen. They required two hours time and included Miller's composite test for high school pupils, a Haggerty reading test and an opposites test. In 1922 and 1923 the tests were conducted by Professor Donald G. Paterson. I am indebted to him for the correlation coefficients given below and for numerous suggestions in connection with the data. Professor Paterson has each year studied the reliability of the tests used with a view to improving them or making a better choice of tests for the following year. In 1922 the tests included Miller's test (as above), Foster's opposites test, a modified Army Alpha analogies test, Moore's completion of definitions test, word vocabulary and sentence vocabulary sections of Haggerty's reading test. In 1923 the tests included a 200-item opposites test, Moore's completion of definitions test and a 255-item recognition vocabulary test.

The test scores were converted to percentile ratings. For the 1921 class it was found that the most satisfactory results for the present study were obtained by combining the ratings for all the tests and taking the average of the combined test rating with the high school percentile rating, giving equal value to each. When either rating was weighted higher, the results varied further from a true prediction. The same method was followed for the 1922 and 1923 classes.

From this there resulted for each class a single percentile scale which measured the relative performance of the students in certain tests supposed to measure intelligence or mental power, together with the relative performance of the students in high school work. The figure opposite a given student's name in one of these scales may be taken as a symbol of his *expectation* in relation to further school work.

This rating now was compared with the scholarship records which measure performance in college work. For the 1921 class the college records for two years have been studied, for the 1922 class the work of the freshman year, and for the 1923 class the work of the fall quarter only of the freshman year. In what follows, except as otherwise stated, the report deals with the work of the entire freshman year for the 1921 and 1922 classes and of the fall quarter only for the 1923 class.

The college marking system uses four letters —A, B, C, D—for acceptable work in individual courses, with E (condition) and F (failure). To the letters honor points are attached as follows: A three, B two, C one, D none, and F minus one. E is considered a purely temporary mark. For entrance to the senior college are required at least ninety credits with ninety honor points and for graduation at least 180 credits with 180 honor points. For entrance to the schools of law, medicine, business and education which require two years of college work there are required either at least ninety credits with ninety honor points, or ninety credits with one honor point for each credit. The purpose of the present study is to test the reliability of certain information obtainable in advance in predicting the ability of individual students to meet the requirements for graduation from this college or for entrance to one of the professional schools named above. For convenience in constructing correlation tables it was assumed that the average grade of C or of one honor point per credit hour represents this requirement. The less rigid requirement of some of the schools would not materially affect the results of this study.

For the purpose of distributing the students in a larger number of divisions as to college scholarship the space represented by each letter was divided into upper and lower halves indicated respectively by plus and minus signs.

The college standing assigned to a student was determined by the average number of honor

points for each credit secured in all the work taken into account. The number of honor points per credit indicated by each letter is as follows:

F—	—1.00 to — .51
F+	— .50 to — .01
D—	00. to + .49
D+	+ .50 to + .99
C—	+1.00 to +1.49
C+	+1.50 to +1.99
B—	+2.00 to +2.49
B+	+2.50 to +2.99
A	+3.

All students who have been dropped for low scholarship and all who cancelled while their grades were such that they might be dropped are denominated F—.

The data for all three classes have been arranged in scatter tables of which only three are published here to illustrate certain specific advantages in the method here followed. In order to determine the relative value of the data from the high school and the intelligence tests and the influence of certain other factors, a full study was made of the 1921 group.

The use of the scatter table as a means of demonstrating the reliability of any measure as applied to individual cases is greatly facilitated by drawing two lines as shown in Tables I and II. The vertical line between D + and C — (+.99 and +1.00) may be called the *threshold of satisfactory university standing.* This term should be understood to mean that grade of work which will win for the student the degree of the college when the required fields of work shall have been covered. Or, it is that mark which indicates the judgment of the faculty that the student is progressing satisfactorily toward the degree for which he is a candidate. The threshold will be described or expressed differently according to the requirements or marking systems of different institutions, but by definition it corresponds to such a judgment of a faculty.

The table is divided into right and left halves by this line. Those students on the right have been satisfactory university students, those on the left more or less unsatisfactory. If the table be divided by a horizontal line at any level, the students below the line will have a relatively low expectation based upon previous performance. A horizontal line drawn as in Table II may be called the *threshold of ability.* It is a hypothetical line based upon the ratings of students in whatever tests used and indicates the judgment of the investigator that students who stand above this level in the lists will be capable of doing satisfactory college work. A prediction that they *will* do satisfactory work can not be made, since such performance requires qualifications not measured by our present tests (character or moral factors).

The students found in the four quadrants of a table divided by these two lines present very different problems to the college administration. Those in the lower right-hand quadrant have gained satisfactory college standing in spite of their low ratings. Those in the upper left-hand quadrant have failed to gain satisfactory standing in spite of their high ratings. These are the most disappointing college students. If the students behaved in college absolutely in accordance with their individual rating or expectations, these two quadrants of the table would be entirely vacant. The lower left quadrant includes those who had low ratings and did poor work in college. The upper right quadrant includes those with high ratings who did satisfactory work in college.

I. Correlation of high school record with freshman scholarship. The table for the 1921 group gave a product moment correlation of .63 ± .02. When the ability threshold was drawn between percentile ranks 25 and 26 the numbers included in the four quadrants of the table were as indicated by the Arabic numerals in Table I.

TABLE I

Ability Threshold	Expectation high performance low 167	Expectation high performance high 163
	Expectation low performance low 96	Expectation low performance fair 9

Threshold of satisfactory university standing

It will be seen that high school performance is a fairly good basis for predicting college work, but by no means satisfactory. The num-

ber in the upper left quadrant is greater than that in the upper right quadrant. The number in the lower right quadrant is 9 out of a total of 435, or over two per cent. This number includes one C + and one B — student.

II. Correlation of intelligence tests with freshman scholarship. Using the intelligence ratings of the same 435 students of the 1921 group a correlation of .50 ± .02 is obtained. The four quadrants of the table contain the following numbers:

192	162
72	9

For this group the intelligence tests prove somewhat less reliable for prediction than the high school records, but the number of successful students for whom failure is predicted (lower right quadrant) is the same in both cases. In the present case this number includes two C + students.

III. Correlation obtained by combining high school records and intelligence tests. In Table II the freshman scholarship of the same students is compared with the combined percentile ranking derived from high school and intelligence test ratings taken together, equal weight being given to each. The superiority of this combined rating over either of the preceding as a means of predicting individual performance is obvious. The number in the right lower quadrant is reduced from nine to four, and includes no student with a standing above C —.

IV. The method employed in Table II can be still further improved by taking into account the sex differences discussed later. The data of Table II may be divided into two tables, one representing the women, the other the men. In the case of the women the ability-threshold may be drawn between percentile ratings 30 and 31. Owing to the lower standing of the men this line can be drawn higher, namely, between ratings 35 and 36. The correlation for the women is .68 ± .02; for the men .65 ± .03. The combination of the two tables gives the following numbers in the four quadrants:

153	166
112	4

The number in the lower left quadrant here is

TABLE II

1921 GROUP—COMPARISON OF COMBINED HIGH SCHOOL AND INTELLIGENCE RATINGS WITH FRESHMAN SCHOLARSHIP

Combined ratings			Freshman scholarship									
			F —	F +	D —	D +	C —	C +	B —	B +	A	Total
		96–100						1	2	2	1	6
		91– 95							4	1	1	6
		86– 90				1	5	2	4			12
		81– 85	1			1	3	7	8	1		21
		76– 80			1	3	11	3	3			21
		71– 75	1			6	10	4	4	1		26
		66– 70	2		4	7	11	4	4			32
		61– 65			5	10	9	4		1		29
		56– 60	2	2	4	10	13					31
		51– 55	3		7	9	10 u	3 s				32
		46– 50	4		6	10	9 cds	1	1 a			31
		41– 45	6	1	12	7	6 v	2				34
		36– 40	2		8	8	6 fp	2 b				26
172	168	31– 35	7	2	15	5	2 er	2 y				33
91	4	26– 30	15	3	9	3	2 tg					32
		21– 25	6	2	4	5						17
		16– 20	10	3	4	5	2 xw					24
		11– 15	7	1	5	1						14
		6– 10	3	2		1						6
		1– 5			2							2
	Total		69	16	86	92	99	35	30	6	2	435

Correlation: .67 ± .02

This table illustrates one step in the development of method. Final results on this group are given beyond.

twenty-one greater than in the same quadrant of Table II. This means that by taking the men and women separately *true* predictions of failure can be given in twenty-one more cases than by taking all students together as in Table II.

The four persons in the lower right quadrant are students for whom the prediction is erroneous. This error is less than 1 per cent. of the 435 persons studied. The record of these students in their second college year was as follows: the man at rating 20 and the woman at 27 retained their standing of C —, the woman at 18 dropped to D —, the man at 30 dropped to D + in the second year. Also three women —25 D —, 27 D —, 29 D + —and three men— 31 D +, 34 D —, 35 D + —raised their college standing for the second year to C —.

On the basis of high school records alone nearly 9 per cent. of those falling below the ability threshold attain a satisfactory university standing. By combining intelligence and high school ratings and tabulating men and women separately this number is reduced to 3.54 per cent. This is 0.92 per cent. of the whole group studied. From inspection of the tables as prepared it is obvious that scholarship prediction is much less accurate for students above the ability threshold than for those below it. Possibly the largest factor in explaining this is the lack of interest and effort in class work on the part of some intellectually capable students.

V. Comparison of the high school and intelligence ratings. This may be understood from the list of ratings of certain individuals given in Table III. This table includes under the several scholarship grades those cases which have the highest and lowest ratings and those in which there is the greatest spread between the high school and intelligence ratings. It has been particularly interesting to note how individuals change position from one correlation table to another. Thus the student marked *a* in Table II stands at 46 in the combined ratings, but on his high school record stands at 13 and in the intelligence tests stands at 80. His scholarship is B —. Seventeen students are included in Tables II and III whose records are marked by small letters, *a*, *b*, etc. These are students who attained satisfactory college standing but who fell below the ability threshold in *one* of the measures employed, either high school record or intelligence test, but not in both. In the present state of opinion all such students rest under a cloud. One institution would regard those with low high school work as unpromising; another institution would expect those with low intelligence scores to fail. In point of fact all these did satisfactory work and the combined ratings indicated only four of them as unpromising. It should be said that a great many cases show differences between the high school and intelligence ratings similar to those mentioned here. The importance of this is that it illustrates how *the high school rating and the intelligence rating supplement each other so that an error in prediction based upon one is corrected by the other.*

TABLE III

EXAMPLES OF STUDENTS AT VARIOUS SCHOLARSHIP LEVELS SHOWING THEIR HIGH SCHOOL AND INTELLIGENCE RATINGS AND THE AVERAGING RATING

	H.S.	I	Av.	
A	100	99	99	
	100	89	94	
B +	97	62	80	
	85	59	72	
	99	98	98	
B —	62	97	80	
	12	80	46	a
	97	53	75	
	98	96	97	
	67	68	67	
C +	32	37	35	
	23	50	36	b
	50	19	34	y
	94	15	55	z
C —	9	83	46	c
	18	74	46	d
	13	54	33	e
	22	53	37	f
	11	43	27	g
	19	58	39	p
	45	16	31	r
	87	11	49	s
	50	10	30	t
	94	15	55	u
	65	19	42	v
	21	14	18	w
	33	5	19	x
D +	91	31	61	
	38	96	67	
	85	3	44	
	15	81	48	
D —	1	45	23	
	100	28	64	
	8	83	45	
	1	3	2	
F	10	5	7	
	1	54	27	
	80	88	84	
	79	5	42	
	51	2	26	

(To be concluded)

J. B. JOHNSTON
DEAN OF THE COLLEGE OF SCIENCE, LITERATURE AND THE ARTS, UNIVERSITY OF MINNESOTA

GET OUT OF THE RUT AND INTO THE ROUTE

that for nearly forty years has led our members up to bigger opportunities. Dept. of College Personnel in charge of university dean. Recognized as the premier placement bureau. Send for free booklet, "Teaching as a Business."

Albert Teachers' Agency

DEPT. S., 437 5TH AVENUE, NEW YORK. (Cor. 39th St.)

Chicago Denver Spokane

We Place You In The Better Positions

Our Reputation is National

Rocky Mts. Teachers' Agency

410 U. S. National Bank Building,

DENVER COLORADO

Wm. Ruffer, Ph.D., Manager

Our Service Unexcelled.

BRANCH OFFICES:

Portland, Oregon, N. W. Bank Building.
Minneapolis, Minn., Lumber Exchange.
Los Angeles, Calif., Chamber of Commerce.
Kansas City, Mo.

THE WESTMINSTER TEACHERS' BUREAU

specializes in securing Christian teachers, officers and helpers for schools, colleges and universities—private, public and denominational—and in assisting trained, Christian teachers and other workers to larger fields of service. Write to-day for information to

HENRY H. SWEETS, Manager, 410 Urban Building, Louisville, Ky.

Kellogg's College Agency established over 30 years has supplied hundreds of fine positions in colleges and high schools. An active search is maintained for capable teachers and recommendation is heartily given. No charge to employers. No registration fee. If you know where a good teacher is wanted or want a better position, write to-day or call

H. S. KELLOGG, 31 UNION SQ., ROOM 1410, NEW YORK CITY, TEL. STUYVESANT 1756

1924 SUMMER SCHOOL 1924

University of Akron, Akron, Ohio

For Teachers, Prospective Teachers and College Students

Courses leading to the completion of the two-year plan; the three-year plan; and the degree in education. Regular courses leading to degrees in the College of Liberal Arts. Graduate courses leading to the Master's Degree. Special courses for those interested in platoon work.

Departments Offering Work

Mathematics	Psychology	Education
Methods	Political Science	Art
Sociology	Biology	History
English	Music	Spanish

For catalogue address Dean W. J. Baukes, Director of the Summer School.

Biological Supplies

For the class room, museum or individual

We are headquarters for first class material in Zoology, Embryology, Botany, Microscope slides, Life histories, Habitat groups, etc Send for catalogues.

The World Renowned

MARINE BIOLOGICAL LABORATORY

WOODS HOLE, MASS

Address Supply Department George M. Gray, Curator

SUMMER SESSION

Oberlin College 1924

June 18th to August 6th

All teachers members of the regular college faculty.

Address for catalogue, E. A. Miller, Director of Summer Session, or Secretary George M. Jones, Oberlin, Ohio.

AFTER THE N. E. A.

why not attend the

PENN STATE SUMMER SESSION

in the beautiful mountains of Pennsylvania? Scenery and Climate Unsurpassed. Undergraduate and Graduate Courses in 30 departments. This year we are featuring

Educational Administration and Supervision
M. de Visme's French House
The Spanish House
Athletic Coaching and Health Education
Library School
Demonstration School
Vocational Education

Illustrated catalog tells it all. Apply to

WILL GRANT CHAMBERS, DEAN,
State College, Pa.

IN accuracy and quality of workmanship the FS model is equal in every respect to the finest Bausch & Lomb equipment.

The FS model has merely been simplified in its adjustments so as to give the greatest practical usefulness in classroom and student laboratory work.

Bausch & Lomb

MICROSCOPE FS

for classroom and student laboratory.

Write us for prices, literature and name of nearest Bausch & Lomb representative.

BAUSCH & LOMB OPTICAL CO.

635 St. Paul St., Rochester, N. Y.

New York Washington Chicago San Francisco London